

near the line of contact, at a point opposite the Black Rock, are met limestones carrying limonite. The bed of the river, and the narrow valley from this point for some distance south of Sunny Brae, are occupied by limestone beds (No. 1),¹ the principal exposures of which show a hard, compact rock, of grey and bluish colors, in places arenaceous or marly. Returning along the east bank of the river, on C. MacDonald's farm, is a compact, bluish limestone, holding rounded pebbles of the slaty breccia.

Still further north, at Bridgeville, opposite the large exposure of gypsum, already alluded to, trial pits showed limonite, filling the junction between Upper Silurian shales, and limestone and gypsum. In all probability this gypsum is connected with that exposed on the opposite bank of the river. Between this point and Springville, limonite and limestone mark the contact of the two systems. In the bank of the river, at McPhee's, is met a large bed of dark-blue, compact limestone (No. 2), weathering to an ochre, and holding nodules of hard, blackish, arenaceous limestone. The thickness of this bed is about 90 feet. At the point where the section is visible, the limestone folds over a spur of the Silurian slates, and its lower part holds fragments of it. The limestone strikes to the north-east, along the side of the hill, and is exposed again in the Cross Valley Brook in an interesting section. The gray and brown Upper Silurian slates, stained with patches of peroxide of iron, and filled with seams holding red and white quartz and calespar, strike S. 75° E., and dip heavily to the north. Resting on them is a breccia of fragments of the slates. On the side next the older rock, the calcareous cement can hardly be distinguished, but at a distance of six inches, the slate fragments grow scattered and are united by dark-grey limestone, which quickly predominates to the exclusion of the slate. The limestone (No. 3), as exposed, is about fifty feet thick, but its normal dimensions are much greater.

Immediately overlying the limestone is a wide outcrop of gypsum and marl, imperfectly exposed, and extending to the road from Springville to New Glasgow. The line of junction then turns to the north, and passes over Irish Mountain, at the north end of which it is marked by conglomerates. The gypsum may be traced by surface pits, on the same course, but it is not exposed until A. Cameron's farm, south of Forbes Lake, is reached. Here it forms a large outcrop, resting on soft, grey marl and shale. The lower beds of the gypsum are laminated and impure in quality. In the middle of the deposit which appears to be about 60 feet in thickness, is a bed twelve feet thick, white and of good quality. A few tons are quarried annually and "boiled" for local use. The overlying beds are coarser, in quality, with layers of soft, white gypsum. Above the gypsum and marls are exposures of red and gray shales with limestones, giving in all a section of about 450 feet. The beds dip a little to the west of north, with an inclination which is heavy near the older rocks, but gradually diminishes toward the upper part of the section.

Returning toward Springville, at L. McLean's are met several thick beds of limestone (No. 4) dipping to the west of north, and overlying the gypsum, probably about 200 feet, the interval being occupied by red shales and marls. At the East River Bridge, near Springville, about on the line of McLean's limestone beds, are numerous exposures of compact, gray and blue limestone, sometimes argillaceous, succeeded by red and gray sandstones, with soft argillaceous shales and marls.

¹ The numbers given in the text correspond to those of the analyses, and to those marked on the sketch map.